

RESPONSE TO OFFICE ACTION

A. Status of the Claims

Claims 1-24 were filed and the claims amended herein. Reconsideration is respectfully requested.

B. Objection to the Specification and Claims

(1) The Action objects to claims 6 and 15-16 as in improper dependent form for not limiting the claims from which they depend. In response, Applicants traverse as the acceptability of this claim format has already been acknowledged by the Board of Patent Appeals in an application presenting the same operative facts as the current case. In particular, in Appeal No. 2005-0396, Application No. 10/077,589, the same issue was raised and reversed by the Board. In that case claim 16 read as follows “16. The corn plant of claim 15, further comprising a nuclear or cytoplasmic gene conferring male sterility.” The Examiner, as here, asserted that the claim was non-limiting and inconsistent with the claim from which it depended, although in the context indefiniteness. The Board rejected this rationale, reversing the rejection and stating that:

For example, claim 16 reads on a corn plant capable of expressing all the physiological and morphological characteristics of the corn variety I180580, further comprising a nuclear or cytoplasmic gene conferring male sterility. In our opinion, the claims reasonably apprise those of skill in the art of their scope. *Amgen*, As set forth in *Shatterproof Glass Corp. v. Libbey-Owens Ford Co.*, 758 F.2d 613, 624, 225 USPQ 634, 641 (Fed. Cir. 1985), ‘[i]f the claims, read in the light of the specifications, reasonably apprise those skilled in the art both of the utilization and scope of the invention, and if the language is as precise as the subject matter permits, the courts can demand no more.’ Accordingly we reverse the rejection of claims 16 and 27-30 under 35 U.S.C. § 112, second paragraph.

Exhibit A at p. 12

As explained by the Board, the claim format is perfectly acceptable, and “[i]f the claims, read in the light of the specifications, reasonably apprise those skilled in the art both of the utilization and scope of the invention, and if the language is as precise as the subject matter permits, the courts can demand no more.” In view of the Board’s decision on this issue, withdrawal of the objection is respectfully requested.

(2) Claim 6 is objected to as being the substantial duplicate of claim 8. Applicants traverse as the claims are of different scopes and thus not substantial duplicates. In particular, claim 6 is a product claim whereas claim 8 is a product-by-process claim. For example, claim 6 is directed to “The corn plant of claim 2, further comprising a nuclear or cytoplasmic gene conferring male sterility”, whereas claim 8 is directed to “A male sterile corn plant produced by the method of claim 7.” Product and product by process claims are interpreted differently for purposes of infringement and thus the claims are not duplicates. Withdrawal of the objection is thus respectfully requested.

D. Rejection of Claims Under 35 U.S.C. §112, First Paragraph - Enablement

1. Rejection of claims 1-24

The Action rejects claims 1-24 under 35 U.S.C. §112, first paragraph, for lack of a seed deposit. In response, Applicant notes that a deposit of 2,500 seeds of the claimed variety will be made with the ATCC in accordance with all of the relevant rules. A declaration certifying that the deposit meets the criteria set forth in 37 C.F.R. §1.801-1.809 will be provided and the claims amended to recite the corresponding accession number. The specification will also be amended to include the accession number of the deposit and the date of deposit.

2. Rejection of Claim 18

Claim 18 is rejected on the basis that allegedly critical steps essential to the practice of the invention have been left out in the form of selection of desired phenotypes. For example, it is stated that one place in the specification requires this, and is also stated that to produce an inbred inbreeding is required.

With respect to the first issue it is noted that selection is not required to practice the invention, as selection of desired lines could occur at any stage, including well after the production of an inbred plant according to claim 18. Claim 18 is directed to a “A method of producing an inbred corn plant derived from the corn variety I002573...” The claim does not require producing a plant with any specific traits and following the steps in the claim will in fact produce an inbred corn plant derived from the corn variety I002573. In addition, such selection may not even take place until after the inbred plant has already been produced and then is later crossed to other inbred plants to produce hybrid plants, which in turn are then evaluated for performance. Claim 18 therefore in no way requires selection to occur at any step for one of skill in the art to produce “an inbred corn plant derived from the corn variety I002573” according to the steps given.

With respect to the second issue regarding whether inbreeding would occur, Applicants note that step (d) requires “repeating steps (b) and (c) for an additional 2-10 generations *to produce an inbred corn plant* derived from the corn variety I002573.” It is therefore abundantly clear to those of skill in the art that the claim requires in steps (b) and (c) sufficient inbreeding to produce the inbred plant.

The claims are therefore fully enabled and withdrawal of the rejection is thus respectfully requested.

3. Rejection of claim 19-22

Claims 19-22 are rejected on the same basis as above, namely that a selection step is required but not included in the claims. Applicants respectfully traverse as practicing the steps of the claim as written would in fact produce a “conversion of the corn variety I002573 to express at least one new trait” as required by the claim regardless of selection. Specifically, the claims require in step (e) “repeating steps (c) and (d) for at least one additional generation to produce a converted plant of the corn variety I002573 wherein both alleles at substantially all of the loci consist essentially of the allele found at the same locus in corn variety I002573...” Therefore, steps (c) and (d) are repeated, which involves crossing subsequent progeny back to a plant of corn variety I002573, a sufficient number of generations until substantially all of the loci in the plant produced consist essentially of the allele found at the same locus in corn variety I002573. This occurs without the need for any selection as one of skill in the art need only start the process with a progeny from a previous generation. Again, while one of skill in the art may employ selection if desired, there is no basis for requiring it. The simple fact is that backcrossing will produce a converted plant with or without selection. The claims as written are therefore fully enabled and withdrawal of the rejection is thus respectfully requested.

E. Rejection of Claims Under 35 U.S.C. §112, Second Paragraph

The Action rejects the claims under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out the subject matter which Applicants regard as the invention. The individual rejections and Applicants’ responses thereto are set forth below

(1) The Action rejects claim 14 part (a) as unclear regarding the relation of the first and second corn plant to variety I002573 and the second distinct corn plant in claim 13. It is also stated that preventing pollination of one plant would not ensure that all seed is hybrid.

In response, Applicants respectfully traverse but note that the claim has been amended herein and all of the issues raised are now moot. Removal of the rejection is thus respectfully requested.

(2) In claims 16 and 21 it is stated that it is unclear how restoration of male fertility can occur because the line is already male fertile. In response, Applicants note that it is well known in the art that male fertility restorer genes are available that may be used to restore male fertility, for example, when cytoplasmic male sterility is used for breeding purposes. This is explained in the specification as follows:

Where one desires to employ male-sterility systems with a corn plant in accordance with the invention, it may be beneficial to also utilize one or more male-fertility restorer genes. For example, where cytoplasmic male sterility (CMS) is used, hybrid seed production requires three inbred lines: (1) a cytoplasmically male-sterile line having a CMS cytoplasm; (2) a fertile inbred with normal cytoplasm, which is isogenic with the CMS line for nuclear genes ("maintainer line"); and (3) a distinct, fertile inbred with normal cytoplasm, carrying a fertility restoring gene ("restorer" line). The CMS line is propagated by pollination with the maintainer line, with all of the progeny being male sterile, as the CMS cytoplasm is derived from the female parent. These male sterile plants can then be efficiently employed as the female parent in hybrid crosses with the restorer line, without the need for physical emasculation of the male reproductive parts of the female parent.

The rejection is therefore believed moot and removal thereof is thus respectfully requested.

(3) In claim 19 it is stated that "comprising a plurality ... each locus" is confusing as not limiting and merely defining inherent properties. Applicants respectfully traverse

as the terms serve to provide antecedent basis, for example, for the converted plant that is produced as a result of step (e) and defined as comprising a genome in which both alleles at substantially all of the loci consist essentially of the allele found at the same locus in corn variety I002573. Therefore, while in some steps the elements introduced may be inherent, their use in the claim is proper under §112 and adds clarity to the claim. Withdrawal of the rejection is thus respectfully requested.

(4) The Action rejects claim 20 as indefinite in that it is unclear whether the locus is inserted into the plant of claim 20 or another plant. In response, Applicants note that the claim has been amended to clarify that the conversion was produced by genetic transformation. It is therefore irrelevant under the claim as written which plant the conversion was introduced into, rather the conversion need only have been produced by genetic transformation. This could therefore be inserted directly into the plant or a progenitor thereof. The rejection is therefore believed moot and withdrawal thereof is respectfully requested.

(5) In claims 16 and 21 it is stated that “improved” and “modified” are relative terms that render the claim indefinite.

With regard to “improved” Applicants note that the term has been amended to recite “modified” and thus this issue is moot. Applicants respectfully traverse with respect to the term “modified” as this term is well known in the art and it is clear from the text that modified is intended with respect to a plant that lacks the transgene or conversion. For example, claim 16 is directed to “(Currently amended) The corn plant of claim 15, wherein the transgene confers a trait selected from the group consisting of herbicide tolerance, insect resistance, disease resistance, yield enhancement, waxy starch,

~~improved~~modified nutritional quality, decreased phytate content, modified fatty acid metabolism, modified carbohydrate metabolism, male sterility and restoration of male fertility.” It is therefore clear that it is the transgene conferring the trait and that if the trait is a “modified” characteristic, the modification is with respect to the plant lacking the transgene. The same is true with respect to claim 21. The claims are therefore fully definite and removal of the rejections is thus respectfully requested.

(6) In claim 23 it is stated that “comprise a diploid genome...each locus” is confusing as not limiting and only reciting an inherent feature.

Applicants respectfully traverse as the term serves to provide antecedent basis, for example, for the characteristics defined for the claimed hybrid, namely, “whereby one allele at each locus in the hybrid genome consists essentially of the allele found at the same locus in corn variety I002573, and further whereby the other allele in a plurality of such loci in the hybrid genome is different from the allele found at the same locus in corn variety I002573.” Therefore, while some recited elements may be inherent, their use in the claim is proper under §112 and adds clarity to the claim. Withdrawal of the rejection is thus respectfully requested.

F. Conclusion

This is submitted to be a complete response to the referenced Office Action. In conclusion, Applicant submits that, in light of the foregoing remarks, the present case is in condition for allowance and such favorable action is respectfully requested.

The Examiner is invited to contact the undersigned at (512) 536-3085 with any questions, comments or suggestions relating to the referenced patent application.

Respectfully submitted,

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